

BALMUS, P., conf.; CARASIEVICI, V., dr.; MAGERU, V., dr.; BRAIER, R., dr.;
ADRIAN, V., dr.; NUBERT, G., dr.; RUGINA, V., dr.;
POPOVICI, N., dr.; POLAC, S., dr.

The action of vasculosympathetic faradization on algodystrophies
of the upper extremities. Med. intern. 15 no.7:809-815 JI '63.

1. Lucrare efectuata in Clinica de balneologie a I.M.F., Iasi.
(SHOULDER-HAND SYNDROME) (RHEUMATISM)
(ELECTROTHERAPY)

POLACEK, A

BERNASEK J., POLACEK K.

Rh faktor a predcasne porody. [Rh factor in premature birth]
Cesk. gyn. 15:1-2 1950 p. 88-94.

1. Of the Third Obstetric-Gynecological Clinic (Head — Prof. J. Trapl, M.D.) of Charles University, Prague-Podoli, and of the Infant Health Clinic (Head — Docent K. Kubat, M.D.), Prague-Podoli.

CML 19, 1, July 50

POLACEK, A.

A study of the prospective network of facilities of the urologic health service in Slovakia. Bratisl. lek. listy 45 no.10:592-618 30 N '65.

1. Poverenictvo Slovenskej narodnej rady pre zdravotnictvo.

POLACEK, Alojz. MUDr.

Results of dispensary service in an industrial region during 1954-
55. Cesk. zdravot. 4 no.5:279-286 May 56.

1. Zavodny lekar OUNZ, Skalica.
(INDUSTRIAL HYGIENE,
dispensary serv. (Cz))

L 31208-66 EWT(m)/T DJ

ACC NR: AP6022599

SOURCE CODE: CZ/0032/65/015/012/0887/0895

AUTHOR: Polacek, B. (Engineer)

35
B

ORG: Transportation Construction and Earth-moving Machinery Research Institute, Brno
(Transporta-Vyzkumny ustav stavebnich a zemnich stroju)

TITLE: Braking hydraulic machines loaded from external forces

SOURCE: Strojirenstvi, v. 15, no. 12, 1965, 887-895

TOPIC TAGS: hydraulic equipment, cyclic load, engine cylinder, engine control system

ABSTRACT: Hydraulic elements used for braking hydraulic machines loaded from external forces differ substantially both in their technical principles, operating efficiency and economy. The article compares several schemes employed to control the speed of hydraulic cylinders and motors operating under loads from external forces and evaluates their relative advantages and disadvantages, using for this purpose diagrams of dimensionless values, e.g., unit load, pressure, speed, etc. This paper was presented by Engineer Z. Ruzha. Orig. art. has: 13 figures, 4 figures and 1 table. [Based on author's Eng. abst.] [JPRS]

SUB CODE: 13 / SUBM DATE: none

Card 1/1 BLG

UDC: 621.28: 621.8-592.1/.2

0915

0618

L 31434-66

ACC NR: AP6023189

SOURCE CODE: CZ/0082/65/028/005/0350/0361

AUTHOR: Krejčova, H.; Polacek, L.; Stein, J.

ORG: Neurological Clinic/headed by Academician R. Henner/. Faculty of General Medicine, KU, Prague (Neurologická klinika fakulty všeobecného lékařství KU); Neurological Section, Hospital, Prague (Neurologické oddělení nemocnice); Laboratory for Pathophysiology of the Nervous System/headed by Academician K. Henner/, Prague (Laborator pro patofyziologii nervového systému)

TITLE: Jacksonian paroxysm of non-tumorous origin

SOURCE: Ceskoslovenska neurologie, v. 28, no. 5, 1965, 350-361

TOPIC TAGS: EEG, nervous system disease, tumor, man

ABSTRACT: Review of 136 cases of Jacksonian non-tumorous epilepsy: 75 motor, 32 sensory, 29 mixed. EEG was negative in 28 or the 108 recorded, variously atypical in the rest. Orig. art. has: 5 figures and 4 tables. [Based on Eng. abst.] [JPRS]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 001 / SOV REF: 001
OTH REF: 034

Card 1/1 *ST*

0915

1400

KOTT, Jindrich; POLACEK, Dusan

Thermoplastics, their properties and use. Sdel tech 11 no.9:
335-337 S '63.

RASKA, B.; POLACEK, E.; LACKOVA, E.; SVEJCAR, J.; JODL, J.

Adrenogenital syndrome with disorder of salt metabolism in infants.
Cesk. pediat. 18 no.1:18-22 Ja '63.

1. Katedra nemocnicí fakulty detskeho lekarstvi KU v Praze, vedouci
prof. dr. J. Svejcar.

(ADRENOGENITAL SYNDROME) (SODIUM CHLORIDE) (DESOXYCORTICOSTERONE)
(HYDROCORTISONE)

POLACEK, E.

2

CZECHOSLOVAKIA

RASKA, B., MD; POLACEK, E., MD; ORT, M., MD.

Chair of Hospital Pediatrics of Charles University
(Katedra nemocnicni pediatrie KU), Prague (for all)

Prague, Prakticky lekar, No 4, 1963, pp 136-139

"Conservative Treatment of Acute Anuria in Children."

VOCAL, J.; POLACEK, E.; NEUGEBAUROVA, L.; SEBKOVA, J.; Technicka
spoluprace: KRISTAN, M.

Concentration test in premature and young infants. Cesk. pediat.
18 no.9:774-780 S '63.

1. I detska klinika fakulty detskeho lekarstvi KU v Praze,
prednosta prof. dr. J. Svejcar Ustav vyzkumu vyvoje ditete v
Praze, reditel prof. dr. J. Houstek II detska klinika fakulty
detskeho lekarstvi KU v Praze, prednosta prof. dr. J. Houstek
Kojenecky ustav v Praze-Krci, reditel MUDr. K. Zeman.
(INFANT, PREMATURE) (KIDNEY FUNCTION TESTS)
(URINE)

POLACEK, E.; HOMOLKA, J.

Levels of potassium and total calcium in infants during treatment of severe diarrhea with dehydration. *Pediatr. listy* 5 no.6:321-322 Nov-Dec 50. (CLML 20:5)

1. Of the First Children's Clinic (Head--Prof.J.Svejcar,M.D.), Prague

POLACEK, E.; HOMOLKA, J.

Potassium levels in dehydration due to severe diarrhea. Cas.lek.
cesk. 90 no.7:198-200 16 Feb 1951. (CIML 20:7)

1. Of the First Children's Clinic in Prague (Head--Prof. Josef
Svejcar, M.D.).

POLACEK, E.

Intravenous percutaneous continuous drip infusion in infants.
Oesterr. Zschr. Kinderh. 9 no.3:285-288 Nov 53. (CML 26:5)

1. Of the First Pediatric Clinic (Head---Prof. J. Svejcar, M.D.).
Prague.

POLACEK, Emil; Technická spolupráce; KRISTAN, M.; HRADKOVA, B.; VACKOVA, L.;
KOPIDLANSKA, F.

Apropos of osmotic alteration of stomach motility in rats. Acta
Univ. Carol. [med.] (Praha) 10 no.1:65-68 '64

1. Ustav vyzkumu vyvoje ditete fakulty detskeho lekarstvi Uni-
versity Karlovy v Praze (reditel: prof. MUDr. J. Houstek, Dr.Sc)
a I. detska klinika fakulty detskeho lekarstvi University Karlovy
v Praze (prednosta: prof. MUDr. J.Svejcar, Dr Sc.)

POLACEK, Emil, MUDr

Toxicosis. Pediat. listy 9 no.2:67-80 Ap '54.

1. I. detska klinika. Prednosta prof. Dr J.Svejcar.
(INFANT NUTRITION DISORDERS,
*toxicosis, epidem. & statist. in Czech.)

POLACEK, E.

MYDLIL, V.; VALIK, A.; POLACEK, E.

Intestinal paresis in acute infantile diarrhea. Pediat. listy
9 no.2:92-94 Ap '54.

1. Z I. detske kliniky, prednosta prof. Dr J.Svejcar, a z III.
detske kliniky, prednosta doc. Dr Vychytil.

(DIARRHEA, in infant and child,

*compl., intestinal paresis)

(INTESTINES, paralysis,

*in inf. diarrhea)

(PARALYSIS,

*intestines, in inf. diarrhea)

ROSSLER, Miroslav, Dr.; POLACEK, Emil, Dr.

Hyperpiretic syndrome. Pediat. listy, Praha 9 no.3:130-135
May-June 54.

1. Z I detske kliniky; prednosta prof. Dr. J.Svejcar
(FEVER, in infant and child
malignant hyperpyrexia)

RASKA, B., MUDr.: POLACEK, E. MUDr.

Some problems of oxygen therapy in pediatrics.
Cesk. pediat. 11 no.1:9-15 Feb 56.

1.2 I. detske kliniky v Praze, prednosta prof. Dr Svejcar
(PEDIATRIC DISEASES, ther.
oxygen)
(OXYGEN, ther. use
pediatric dis.)

POLACEK, E., Doc., Dr.; JECH, C., Dr.; za technicke spoluprace
M. Kristana.

Absorption of 0.9 o/o sodium chloride injected subcutaneously
in dehydration shock. Cesk. pediat. 11 no. 6:406-411-June 56.

1. Z. I. detske kliniky: predn. prof. Dr. J. Svejcar, a z
Ustavu fysikalni chemie CSAV; predn. akademik R. Brdicka.

(DEHYDRATION, experimental,

eff. of isotonic solution, absorp. rate after
subcutaneous admin. in rats. (Cz))

(ISOTONIC SOLUTIONS, effects,

on exper. dehydration shock, absorp. rate after
subcutaneous admin. in rats. (Cz))

EXCERPTA MEDICA Sec.6 Vol.11/2 Internal Med. Feb.57
POLÁK E.

1127. POLÁK E. Chir. Klin. Lék. Fak. Hyg., Praha. *O nerecidivujících formách chronické pankreatitidy. On non-recurring forms of chronic pancreatitis CAS.LÉK.CES. 1956, 95/23-24 (644-648)
In addition to chronic, recurrent pancreatitis, which is characterized clinically by the recurrence of acute attacks of inflammation in the chronically inflamed terrain, rare chronic forms of pancreatitis occur which do not exacerbate in this manner. The author deals with the non-icteric form of hypertrophic pancreatitis. In one case of this type, which was followed in detail and is described more fully, an extremely large tumour of the whole pancreas was found at operation in 1939; macroscopically this was classified as a malignant tumour. After a simple laparotomy, however, the tumour gradually disappeared, leaving as a sequela sclerosis of the pancreas, manifested endocrinologically by poor secretion. The patient was followed-up for a period of 15 yr. and was without symptoms. An analysis is also made of 3 cases of 'chronic colliquating pancreatic necrosis', in the second of these the symptomatology was slight and the condition likewise had a pseudo-tumorous character. After the drainage of one focus of colliquation, healing took place. The genesis of this pancreatic condition is probably similar to that of pseudo-cysts, the difference being that the cortex of the pancreas is not broken down and the pancreatic juice does not escape. The position of surgery in relation to this condition is not clear and there are no guides in the literature. The most practicable is perhaps conservative therapy, leading finally to scarring; in extensive necrosis, in our own 2nd case drainage of only one of the many foci proved sufficient in circumscribed processes, partial resection of the gland may perhaps be recommended.
(VI, 9*)

CZECHOSLOVAKIA/Human and Animal Physiology - Metabolism.

V-2

Abs Jour : Ref Zhur - Biol., No 4, 1958, 17907

Author : Emil Polacek

Inst :

Title : *1. DETSKA KLINIKA, PREDNOSTA PROF DR. J. SVEJCAR*
Maximal Loss of Sodium and Chlorides in Experimental
Dehydration.

Orig Pub : Casopis lekaru ceskych, 1956, 95, No 49, 1351-1354

Abstract : Dehydration was produced in 26 rabbits by means of continuous peritoneal dialysis with a 5.6% glucose solution and in 8 rabbits by means of discontinuous peritoneal dialysis for 2 to 3 days until the occurrence of shock. With continuous peritoneal dialysis the Na loss for 8 to 12 hours of the first day amounted to 17.8 mM per kg of body weight, while the chloride loss came to 15.6 mM per kg. This corresponded to a loss of 122 ml/kg of extracellular fluid (in the case of Na). With discontinuous peritoneal dialysis the Na loss for the first 2 to 3

Card 1/2

PODACEK, E.

Intraocular pressure following depletion of Na and Cl. Cesk. fysiol.
5 no.2:194-200 1957.

1. I. detska klinika, Praha.

(SODIUM, deficiency,

eff. on intraocular pressure in animals (Cz))

(CHLORIDES, deficiency,

same)

(INTRAOCULAR PRESSURE, physiology,

eff. of chloride & sodium depletion in animals (Cz))

POLACEK, Emil, Doc., Dr.

Chronic water excess. Cesk. pediat. 12 no.5-6:395-398
May-June 57.

1. Detska klinika, prednosta prof. Dr. J. Svejcar.
(WATER, metab.
chronic hyperhydration in inf. (Cz))

POLACEK, Emil, Doc., Dr.

Pathophysiology and treatment of water and salt disturbances.
Cesk. pediat. 12 no.5-6:523-530 May-June 57.

1. Detská klinika, přednosta prof. Dr. J. Svejcar.
(BODY FLUIDS

water-electrolyte disord. in child, pathophysiol. & ther.
(Cs))

POLACEK, E., Doc., Dr.; RASKA, B., as., Dr.

Diazile toxicity in infants. Cesk. pediat. 12 no.5-6:
542-545 May-June 57.

1. Detska klinika prof. Dr. J. Svejcara, Praha.

(SULFONAMIDES, inj. eff.

sulfamethazine in ther. of meningococcic meningitis
in child (Cz))

(MENINGITIS, MENINGOCOCCIC, in inf. & child
ther., sulfamethazine causing inj. eff. (Cz))

POLACEK, E.; JECH, C.; za technicke spoluprace M. Kristana

Treatment of dehydration shock by saline solutions. Cas.
lek. cesk. 96 no.24-25:737-740 21 June 57.

1. I. detska klinika, prednosta prof. dr. J. Svejcar. Ustav
fysikalni chemie CAV, prednosta akademik J. Brdicka. E. P.,
Praha 2, Sokolska 2.

(DEHYDRATION, exper.

shock, eff. of saline solutions in rats (Cz))

(SODIUM, eff.

saline solutions on exper. dehydration shock in rats (Cz))

POLACEK, Emil, za technicke spoluprace M. Kristana

Glucose absorption in sodium chloride deficiency. Cas. lek. cesk. 97.
no.20:625-626 16 May 58.

1. I. detska klinika KU v Praze, prednosta prof. Dr. J. Svejcar. E. P.,
Praha 2, Sokolska 2.

(GLUCOSE, metab.

gastrointestinal absorp. in sodium chloride deficient
rats (Cz))

(GASTROINTESTINAL SYSTEM, metab.

glucose absorp. in sodium chloride deficient rats (Cz))

(SODIUM CHLORIDE, defic.

eff. on gastrointestinal glucose absorp. in rats (Cz))

POLACEK, Emil; HANAX, Jiri; za technicke spoluprace KRISTANA, M. a
POSLETA, Z.

A contribution to the measurement of urinary concentration in
infants. Cesk.pediat.16 no.1:7-10 Ja '61.

1. I. detska klinika v Praze, prednosta prof. dr. J. Svejcar
Ustav vyzkumu vyvoje ditete, reditel prof. dr. J.Houstek
Vyzkumny ustav sdlovaci techniky A.S. Popova.
(URINE chemistry)

POLACEK, Emil
SURNAME, Given Names

(2)

Country: Czechoslovakia

Academic Degrees: MD

Affiliation: First Child Clinic (I. detska klinika), Prague; Director: Prof
J. SVEJCAR, MD.

Source: Prague, Prakticky Lekar, Vol 41, No 9, 1961, pp 400-401.

Data: "Child Diarrhoea Caused by Non-Microbial Reasons."

43

RASKA, B.; HANAK, J.; POLACEK, E.

The electrocardiogram and disorders of ion equilibrium in children.
Cas.lek.cesk 100 no.16:90-95 21 Ap '61.

1. Katedra nemocnicni pediatrie fakulty detskeho lekarstvi KU v Praze,
prednosta prof. MUDr. J. Svejcar.

(ELECTROCARDIOGRAPHY in inf & child)
(IONS metabolism)

POLACEK, E.; POLANSKA, M.

Concentration test in infants. Cesk. pediat. 17 no.1:1-10 Ja '62.

1. Ustav vyzkumu vyvoje ditete, reditel prof. MUDr. J. Houstek
Kojenecky ustav v Praze-Krci, reditel MUDr. Z. Zeman.

(KIDNEY FUNCTION TESTS in inf & child)

KUBISTOVA, Jarmila; POLACEK, Emil

Evacuation of glucose solutions from the stomach of rats in hypotonic hyperhydration. Acta Univ. Carol. [med.] (Praga) 10 no.3:231-239 '64.

1. Ustav vyzkumu vyvoje ditete fakulty detskeho lekarstvi University Karlovy v Praze (reditel prof. MUDr. J. Houstek, DrSc.).

JERMAN, Ladislav; POLACEK, Frantisek

Experience with lowering noise of bar glaziers in foundries.
Prac. lek. 17 no.6:245-248 Ag '65.

1. Odbor hygieny prace Krajske hygienicko-epidemiologicke
stanicy Stredoceskeho Krajskeho narodniho vyboru (vedouci
doc. dr. J. Vrba, CSc.).

L 13595-66

ACC NR: AP6006073

SOURCE CODE: CZ/0053/65/014/004/0308/0309

AUTHOR: Polacek, I.; Krejci, I.

ORG: Research Institute for Natural Medicinal Substances, Prague (Vyzkumny ustav prirodnich leciv)

TITLE: Role of the structure and effect of oxytocin analogs in isolated mammary gland of the rat [This paper was presented during the Twelfth Pharmacologic Days, Smolenice, 28 Jan 65.]

SOURCE: Ceskoslovenska fysiologie, v. 14, no. 4, 1965, 308-309

TOPIC TAGS: rat, hormone, endocrinology, calcium, gland drug, drug effect, pharmacology

ABSTRACT: The effect of oxytocin on isolated breast or lactating rat was directly dependent on the calcium concentration; the effect of 9 oxytocin analogs was weaker but decreased activity was less than decreased uterotonic effect. Some qualitative differences were found, especially with leucyl-cystein-oxytocin, which had some protracted hormonogenic properties. [JPRS]

SUB CODE: 06 / SUBM DATE: none / OTH REF: 001

Card 1/1

POLACEK, J.

Fractionating of polymethylmethacrylates by precipitation chromatography. Coll Cz Chem 28 no.7:1838-1847 J1 '63.

1. Institut fur physikalische Chemie, Tschechoslowakische Akademie der Wissenschaften, Prag.

POLACEK, J

CZECHOSLOVAKIA

POLACEK, J.

Institute of Physical Chemistry of the Czechoslovak Academy
of Sciences, Prague

Prague, Collection of Czechoslovak Chemical Communications,
No 11, 1963, pp 3011-3017

"Fractionation of Polymethylmethacrylate through Precipitation
Chromatography. II. Influence of Fractionation Conditions
on the Course of Fractionation."

POLACEK, J.

Fractionization of polymethylmethacrylate by precipitation chromatography. Pt.2. Coll Cz Chem 28 no.11:3011-3018 N'63.

1. Institut fur physikalische Chemie, Tschechoslowakische Akademie der Wissenschaften, Prag.

CZECHOSLOVAKIA

POLACEK, J.

Institute of Physical Chemistry of the Czechoslovak Academy
of Sciences, Prague

Prague, Collection of Czechoslovak Chemical Communications,
No 7, 1963, pp 1838-1846

"Fractionation of Polymethylmethacrylate Through Precipitation
Chromatography."

POLACEK, J.

Med
1640. Electrophoretic analysis of blood serum in acetate buffers. V. Kalous and J. Poláček (Inst. Phys. Chem., Charles Univ., Prague, Czechoslovakia). *Chem. Listy*, 1956, 50 (10), 1856-1859. — Since the mobility of the M-2 component of blood serum (Mehl, Golden and Winzler, *Proc. Soc. Exp. Biol. Med.*, 1949, 72, 116) at various pH values had not been measured, the authors analysed blood-serum samples containing an increased amount of M-2 component as well as of M-1 (immunoprotein) in acetate buffer soln. pH 4.2 to 5.2. The results obtained for mobility and iso-electric point of M-2 are reported.
J. ZYKA

POLACEK, J.

Automobiles in mines and quarries.

p. 188 (Automobil) Vol. 1, no. 6, June 1957 Praha, Czechoslovakia

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC, VOL. 7, NO. 1, Jan. 1958

POLACEK, J., inz.; LAUTENBACH, J.; VOSAHLIK, R.; KULISEK, B.

Theory and practice of the explosive metal shaping. Stroj vyr
9 no.5:240-245, 248 '61.

1. Zavody na vyrobu vzduchotechnickych zarizeni, n.p.,
Milevsko.

S/081/62/000/024/033/073
B144/B186

AUTHORS: Poláček, J., Matyska, B.

TITLE: Chromatographic fractionation of polychloroprene

PERIODICAL: Referativnyy zhurnal: Khimiya, no. 24, 1962, 259-260,
abstract 24D268 (Collect. Czechosl. Commun., v. 27, no. 4,
1962, 816 - 822 [Ger.; summary in Russ.])

TEXT: It was established that polymers can be separated chromatographi-
cally into fractions having similar molecular weight even on adsorbents
such as powdered glass and NaCl. The chromatography was performed at
19 - 23°C in columns (44.0•2.8 or 58.0•2.8 cm) filled with powdered glass
having a granulation of 0.01 or 0.02 cm or with NaCl powder of <0.02
granulation, using C₆H₆ as eluant and a sample volume of 0.3 - 0.5 g
polychloroprene in the form of a 5 - 7% solution. The adsorbent was
heated preliminarily for 4 - 6 hrs at 200 - 250°C, fed still hot into the
column filled with N₂, blown through with N₂, 10 times, and then impreg-

Card 1/2

POLACEK, Jaroslav, inz.

Device for concrete core drilling and hole drilling in finished reinforced concrete constructions. Inz stavby 11 no.8:302-303
Ag '63.

POLACEK, Jaroslav, inz.

A device for core drilling in concrete constructions. Inz
stavby 10 no.11:415 N '62.

POLACEK, Jiri, inz.

Theoretical and practical principles of milling in rod mills.
Rudy 11 no.6:201-205 Je '63.

1. Ustav pro vyzkum rud, Praha.

POLACEK, Jiri, inz.; PETRIK, Zdenek, inz.

Electrohydraulic effect and its technical application. Rudy
10 no.7:239-240 J1 '62.

1. Ustav pro vyzkum rud, Praha.

POLACEK, Jiri, inz.

Examination of dressing ability of Cuba chromium ore on jigs
and vibrating tables. Rudy 13 no.4:Suppl:Prace vyzkumnych
ustavu no.2:11-13 Ap '65.

1. Institute of Ore Research, Prague.

POLACEK, J.; KALOUS, V.

Electrophoretic investigation of the M-2 component of blood serum in acetate and Veronal buffers in the course of alcohol fractionation. p. 164. (Chemicke Listy. Vol. 51, no. 1, Jan. 1957.)

SO: Monthly List of East European Accession (MEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

POLACEK, J.

Ceiling supports with bolts. p. 231. (RUDY, Vol. 5, No. 3, Aug 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 12, Dec 1957. Uncl.

POLACEK, J.

Distr: 4E2c(j)/4E3b/4E3d

Single-point determination of viscosity. J. Polacek
(Czechoslovakia Acad. Scis., Prague). *J. Polymer Sci.* 39,
469-73(1959).—Intrinsic viscosities of benzene solns. of
fresh, natural, and aged Svltprene K (polychloroprene) and
their fractions were calcd. by using Hart's method (CA 49,
15385f) for the single-point detn. of intrinsic viscosities.

John H. Dittmar

1-88(NB)

POLACEK, J.

Effect of aging on the molecular weight distribution in Svitprene K.
Coll Cz Chem 25 no.8:2103-2114 Ag '60. (EEAI 10:9)

1. Institut für physikalische Chemie, Tschechoslowakische Akademie
der Wissenschaften, Prag.

(Chloroprene)

20992

1.1110 2208.2808

Z/031/61/009/005/003/004
D007/D102

AUTHORS: Poláček, J., Engineer; Lauterbach, J.; Vošahlík, R.;
and Kulíšek, B.

TITLE: Theory and application of explosive metal forming

PERIODICAL: Strojírenská výroba, v. 9, no. 5, 1961, 240 - 245, 248

TEXT: The Závody na výrobu vzduchotechnických zařízení, n. p. Milevsko, (Plant for the Production of Pneumatic Equipment, Milevsko) is preparing the introduction of explosive forming for VLC pressure containers mounted on RR carriages. The article describes tests on a one-third-size model (actual dimensions of the vessel are shown in Fig. 1), performed to study the technology of this advanced metal forming method. Factors which must be considered in explosive forming are: (1) Choice of a suitable explosive charge; (2) the transmitting medium; (3) shape, dimensions and material of the mold; (4) material for forming; and (5) technological preparation of the working site. All types of brisant explosives are suitable for explosive forming. Those used in the described tests were cast TNT, plastic

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X

Z/031/61/009/005/003/004
D007/D102

Theory and application...

NP 10, gelatine high explosive (Perunit 20) and ammonium nitrate high-explosive powder. Properties of Czechoslovak commercial explosives are listed in Table I. The plastic NP 10 explosive was chosen for testing of annular-, ball-, rod-, and pear-shaped charges. The annular shape is not suitable since it is not possible to ignite the entire ring simultaneously and the blank corrugates and tears. The ball-shaped charge (Fig. 4) is more suitable and can be ignited with one detonator placed in the center. However, great pressure acts on the bottom of the mold and a secondary reaction presses the blank upwards with a resultant negative influence on the final shape of the forging. Better results were achieved with rod-shaped charges which can be ignited either at the top, at the middle, or at the bottom (Fig. 6). When bottom ignition is applied (Fig. 7), shock-waves disperse conically and the pressure acting on the mold bottom is considerably smaller, reaching only 2,000 - 2,500 kg/cm². Since the top part could not be drawn out completely with any of these charge shapes, a modified pear-shaped charge was tested which was suspended with the smaller end downwards and ignited at the bottom.

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Z/031/61/009/005/003/004
D007/D102

Theory and application...

However, the desired effect was still not reached. Since empirical results are still insufficient, the proper charge shape and initiation point will have to be experimentally found for each specific case. Water was used in the tests to transmit the explosive force to the blank. The more advantageous closed mold (requiring smaller charges) could not be used since the mold in this specific case would have been too heavy. However, in the upper regions of an open mold, the transmitted pressure rapidly decreases due to the dilution of the transmitting medium, which explains the fact that the upper regions of the blank were not drawn out completely. The mold used in the tests consisted of two welded halves made of 11 523 grade steel sheet. The mold shell was reinforced by 2 strong hoops and a number of radial struts. The mold was not annealed, despite the large number of welds which caused considerable stresses, and was loosely placed on the base plate. The blank was secured either by clay to the steel base plate, or by a 50 mm thick rubber lining clipped to the blank. The tests revealed that the mold bottom should be made of a material with elastic properties. The originally used 50 and 80 mm thick plates of rolled 11 370 steel bent and

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Theory and application...

Z/031/61/009/005/003/004
D007/D102

ruptured after several tests with the grain structure of the fracture resembling that of cast steel. When covered with a 50 mm rubber lining, the steel bottom plates resisted shock waves till the lining was mechanically damaged. A gap formed by placing spacers between the two mold halves facilitated air escape from the space between the mold and the blank. The gap width was varied within the range of 2 - 6 mm. Since the tests were made in an open mold, adequate safety measures had to be taken. When observing the safety regulations of Edict no. 305, published in issue 132 of the Úřední listy (Official Bulletin), dated Oct 24, 1952, explosive forming does not imply any more danger than common pressing. Approximately 45 tests were performed on the rather large one-third-size model. They revealed some technological problems which would not have been recognized had the tests been performed with a smaller model. The gathered experiences, which led to the final design of the mold, can be summarized as follows: (1) Most advantageous is a rod-shaped charge with bottom initiation; (2) the shock-wave effect on the bottom of the mold must be reduced by increasing the distance

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Theory and application...

between the charge's lower end and the bottom; (3) the upper part of the blank must be extended by 50 mm to achieve complete drawout; (4) the effect of the explosive must be increased by raising the water level above the charge; (5) a better securing of the blank must be developed to prevent its damage at each explosion; (6) rubber with a hardness of 60 - 70° Sh offers the best resistance to shock waves; (7) the sheet thickness of the actual-size blanks must be increased 10% to obtain the desired wall thickness of pressings. The actual-size mold, designed according to these experiences, is shown in Fig. 9. The reinforced shell-type mold is horizontally split into 2 halves (1 and 2). The upper half is provided with an extension for a higher water level. Due to the large dimensions, the air between the mold and the blank cannot be evacuated, but escapes through a gap between the 2 mold halves and an annular slit in the upper section of the mold. The rather curved bottom (7) is embedded in a reinforced-concrete bed. On the inside, the bottom is lined with a 200 mm thick rubber layer (8). The molds for both the scaled-down model and the actual-size pressings were made of 11 373 and 11 523

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grade steels. Steel was chosen since the effect of shock waves on other potential mold materials is not yet known. However, test results obtained thus far indicate that plastic materials and reinforced concrete can probably be used for molds. The test blanks (Fig. 10) were made of certificated 11 373.1 - size sheets, welded from 1 or 2 pieces with BH 48 electrodes. The welds were made using backing bars. To prevent cracking of the pressings observed in previous tests, blanks were normalized after welding. However, this treatment produced no substantial improvement and was abandoned in later tests. The thinout of the material was measured with micro-meters at several points and results are listed in Table II. During explosive forming, the material is compressed which results in thinout of the final pressed product. This material reduction, which is rather uniform despite differences in material stretching ranging from 6.90 to 11.64%, must be compensated for by adding a 10% allowance to the blank. The material used for explosive-forming tests was 3 mm thick, 11 373.1 sheet metal, certificated according to ČSN 41 1373. The original properties of the material underwent

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the following changes by explosive forming: The strength increased from 36 - 38 kg/mm² to 49 - 52.9 kg/mm² at the place of greatest deformation; to 43.5 - 50.3 kg/mm² in the top section; and to 43.3 - 50.6 kg/cm² in the bottom section. (The maximum permissible standard strength for this material is 48 kg/mm²). The ductility increased from 26.4 - 28.8 kg/mm² to 38.8 - 49.8 kg/mm² (in one case even to 50.8 kg/mm²). The elongation decreased considerably and ranged from 6.6 - 18.9%, extreme values being 6 and 24.4% respectively. Contraction values ranged from 59 - 67.8%. Notch-bar strength for 6 mm wall thickness ranged from 5.3 - 19.6 kgm/cm²; in one case only was it as low as 3.7 kgm/cm². Microstructure tests made on samples taken from welds and other places revealed ferritic structure with a small amount of fine-grained perlite. The weld metal had the same structure. The ferrite grains had the same shape as those of the unformed material, which means that deformation (grain stretching), typical for cold-forming, did not take place. A central part, explosively formed during the tests in June 1960, was used for the construction of a one-third-size pressure vessel assembled 4 months

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later. This test vessel was filled with water and the pressure was increased until failure. At 20 - 25 atm, deformation took place rounding both conical sections, however, failure did not occur until 30 atm. The rupture originated in the bottom section at a distance of 20 mm from and parallel to the weld. The central part remained undamaged, which proves that explosive forming influences the properties of the formed material which retains its toughness despite increased strength and reduced ductility. However, the effects of various explosives on the change of mechanical properties of the formed material are still completely unknown. The insufficient knowledge of laws governing the explosive-forming technique is the greatest obstacle to a wider, economical use of this method. A contribution towards solving this problem was made by Soviet scientist N. Akulov who discovered the laws of plastic flow of metals. To comply with the above safety regulations, a site for explosive-forming was chosen at a sufficient distance from factory buildings. Fork lifts and a truck-mounted crane were used for handling the mold. The mold was partially installed underground in a forming pit (Fig.

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17) surrounded by a protective earth embankment. The curved bottom of the mold was embedded into the reinforced-concrete base plate. Surroundings of the mold bottom were also concreted with a slope towards a drain to draw-off water ejected from the mold. The drainage pipes end in a river at a distance of about 50 m. The top part of the mold is lifted by three HZ 5 hydraulic jacks. A shelter at a distance of 25 m protects the blastman and houses the controls for water pump and hydraulic jack operation. In conclusion, the author states that explosive-forming, a suitable metal-working method for large, intricate forgings and very hard materials, is not yet used in the CSSR, partly because little is known about the properties of explosives except their destructive properties. There are 20 figures and 2 tables.

ASSOCIATION: Závody na výrobu vzduchotechnických zařízení, n. p.
Milevsko (Plant for the Production of Pneumatic
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Increasing the loading capacity of pipe lines laid in trenches or embankments. Inz stavby 10 no.7:248-252 JI '62.

1. Vodni stavby, n.p. (for Dratva). 2. Ustav teoreticke a aplikovane mechaniky, Ceskoslovenska akademie ved, Praha (for Polacek).

11210

33198
Z/034/62/000/002/002/002
R073/E535

AUTHORS: Poláček, J., Engineer, Lauterbach, J., Kulíšek, B.
and Vošahlik, R.

TITLE: Equipment for explosive forming of hollow bottomless
vessels. Patent Application Class 7c, 14, PV 7700-60
dated December 23, 1960

PERIODICAL: Hutnické listy, no.2, 1962, 137

TEXT: The die 4 (Fig.3), together with the hollow blank to
be formed, are fitted watertight on one arm of the communicating
vessels 1, 2, 3. Prior to forming, the fluid level is equal or
higher than the level of the top edge of the blank 6 which is to
be formed. The attachment 5 permits using a higher fluid level.
The fluid dampens the unutilised energy during forming. Compared
to forming in a die submerged into a container with a fluid, this
equipment has the advantage that a large and deep container is
not required and that the level of the fluid can be easily
regulated. There is 1 figure. X

[Abstractor's note: Complete translation.]

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- Prague, Collection of Czechoslovak Chemical Communications, Vol. 27, No. 4, April 1963.
Copyright by the Publishing House of the Czechoslovak Academy of Sciences, 1963.
1. "Photography of Nucleonemal Arsenic and Related Substances. Part VII. Absorption Processes During the Electroreduction of the Trivalent Ion." P. POLACEK of the Faculty of Science of the Czechoslovak Academy of Sciences, Prague, and J. CERNY of the Institute of Physical Chemistry, Prague, at the Polish Academy of Sciences, Warsaw (English article).
 2. "Substitution of Ligands in Macrocyclic Compounds. Part IV. Permalloy of Ferric Macrocyclics." V. POLACEK of the Institute of Inorganic Chemistry at Charles University, Prague; pp. 775-781.
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 8. "Separation Methods for Natural Products. Part I. New Comparative Distribution Methods." V. POLACEK, J. CERNY and J. CERNY, Research Institute for Natural Drugs, Prague; pp. 825-831 (English article).

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The main task consists in the systematic improvement of technical standards of machine industry products and production processes. Strojirenstvi 15 no.1:1-2 Ja '65.

1. Minister of General Mechanical Engineering, Prague.

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Influence of free fatty acids on the distribution of bilirubin and its clinical significance in the newborn. Rev. Czech. med. 11 no.3:161-169 '65.

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1. Of the Third Obstetric-Gynecological Clinic (Head — Prof. J. Trapl, M.D.) of Charles University, Prague-Podoli, and of the Infant Health Clinic (Head — Docent K. Kubat, M.D.), Prague-Podoli.

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in Prague-Podole (Head -- Docent K.Kubat, M.D.) and of the Third
Obstetrical Clinic in Prague-Podole (Head -- Prof. J.Trapl, M.D.).

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[Rh factor in premature birth] Rh faktor a predcasne porody.
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KUBAT, K.; POLACEK, K.

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(Head -- Prof. J.Trapl, M.D.), Prague.

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POLACEK, K.

For greater economy in the machinery industry. p. 1. STROJIRENSTVI.
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(ASPHYXIA, NEONATORUM,)

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The machinery industry enters the second Five-Year Plan. p. 1.
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SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 6,
June 1956, Uncl.

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M. Vojta, vedouci pediatrickeho vyzkumu doc. dr. K. Polacek,
CSc.

(ERYTHROBLASTOSIS, FETAL) (EXCHANGE TRANSFUSION)
(BILIRUBIN) (BLOOD CHEMICAL ANALYSIS)
(INFANT, PREMATURE, DISEASES)

POLACEK, Karel

Good start of a new car. Automobil Cz 8 no. 521 My '64.

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Beginning the first year of the second Five-Year Plan. p. 1. (Strojirenstvi, Vol. 6, No. 1, Jan 1956, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (FEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

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Let us raise our technical literature to the world.

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Origin of neonatal jaundice. Cesk. pediat. 12 no.1:46-53
Jan 57.

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POLACEK, Karel, Dr.

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Cesk. pediat. 12 no.5-6:482-486 May-June 57.

1. UPMD, Praha-Podoli, reditel prof. Dr. J. Trapl, vedouci
pediatrickeho useku prof. Dr. K. Kubat.

(ERYTHROBLASTOSIS, FETAL, ther.

exchange transfusion, indic. & technic (Cz))

(BLOOD TRANSFUSION

exchange in fetal erythroblastosis, indic. & technic
(Cz))

POLACEK, KAREL, DR.

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12 no.7:632-633 5 July 57.

(ERYTHROBLASTOSIS, FETAL
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Household-work mechanization and automation p. 1043

TECHNICKA PRACA. (Rada vedeckych technickych spolocnosti pri Slovenskej akademii vied) Bratislava, Czechoslovakia, Vol. 11, no 12, Dec. 1959

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keho useku prim. dr. K. Polacek.
(BLOOD TRANSFUSION compl.)

CZ/4-60-5-5/35

AUTHOR: Poláček, Karel, Minister of General Mechanical Engineering

TITLE: Mechanization and Automation in Mechanical Engineering During the Third Five-Year Plan

PERIODICAL: Nová Technika, 1960, No. 5, pp. 199 - 201

TEXT: The author gives percent figures on the planned increase of production of plants subordinated to the Ministerstvo všeobecného strojírenství (Ministry of General Mechanical Engineering), and lists the fields of application of mechanization and automation. The planning provides the modernization of about 10,000 machine tools, the installation of a minimum of 8,000 automatic and semiautomatic machine tools, 4,500 of which will be preset program machines; 397 new production lines will be constructed, 79 of which should be automatic. Special single function machines will be developed; the ČZM Plant at Strakonice will supply new chipping machines, and the národní podnik Blanické strojírny (Blanice Mechanical Engineering Plant) similar equipment. The installation of 290 assembly lines, of 300 machines replacing manual labor etc is planned. The standardization of constructional elements for automation and mechanization works in the field of weak current electro-engineering was introduced at the Vývojový ústav mechanizace a automatizace (Institute

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CZ/4-60-5-5/35

Mechanization and Automation in Mechanical Engineering During the Third Five-Year Plan

for Development of Mechanization and Automation) at Nové Město nad Váhom. A minimum of 1,500 molding machines will be improved and more than 800 automatic molding machines and 141 molding lines put in operation. A minimum of 500 automatic and semiautomatic welding equipments will be installed. Percent figures on the planned increase of mechanized and automated loading, unloading and conveying equipments produced follow. Between 1960 and 1962 the following plants will be equipped with complex conveying systems: PAL Plant at Kbely, Tatra Plant at Koprivnice, Povážské strojárne (Povážské Machinery Plants), Děčínské strojírný (Děčín Machinery Plants), Technomat Plant, Chirana - závod Strašnice (Strašnice Plant of the Chirana Works), Moravia Plant at Mariánské Údolí, ZPS Plant at Kysucké Nové Město etc. At the AZNP Plant at Mlada Boleslav a fully automatic conveyor line for the production of component parts and a fully mechanized molding line, and at the ZJS Plant at Brno a mechanized progressive assembly line were put in trial operation. Assembly lines will be tried at the ZKL Plant in Líšeň, at the nár. podnik Zemědělské stroje (Agricultural Machinery, People's Enterprise) at Prostějov, at the n.p. Moravia (Moravia, People's Enterprise) in Mariánské Údolí, at the Tesla Plants in Orava and Valašské Meziříčí, at the Minerva Plant at Boskovice etc. The complex mechanization

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Mechanization and Automation in Mechanical Engineering During the Third Five-Year Plan

and automation of control and administrative sections will be introduced at the Sdružení Motocyklů a jízdních kol (Association for Motorcycles and Vehicles), at the AZNP Plant at Mladá Boleslav, at the ZJS Plant at Brno and at the n.p. Mototechna (Mototechna, People's Enterprise). At the Povážské Machinery Plants 24.5 million Kčs could be saved by mechanization and automation. The ZJS Plant at Brno will develop new electronic typewriters, teletypewriters and automatic electronic computers. In the field of mechanization of agriculture more than 150 types of new machines will be designed and 50 models redesigned. New automatic telephone exchanges will be produced in cooperation with the USSR and Hungary, and semiautomatic telephone communication between the Communist countries materialized. Finally the author underlines the significance of railroad safety devices making possible an increased traffic density; the relay system in question will be produced in cooperation with the USSR.

Card 3/3

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Haemolytic disease of the newborn control of replacement of the erythrocytes by means of foetal haemoglobin. Rev. Czech. med. 7 no.4: 263-270 '61.

1. Institute for Care of Mother and Child, Prague-Podoli. Director of Paediatric Research: Karel Polacek, M. D.

(ERYTHROBLASTOSIS FETAL ther) (BLOOD TRANSFUSION)
(HEMOGLOBIN)

CZECHOSLOVAKIA

Augustin SYROVATKA, Institute for the Care of Mother and Child, Head (reditel) Docent Dr M. VOJTA; Chief of Pediatric Research (vedouci pediatrickeho vyzkumu) K. POLACEK, MD, Prague.

"Traffic Accident Mortality of Children in Czech Krajs."

Prague, Casopis Lekaru Ceskych, Vol 101, No 52, Dec 28, 1962; pp 1513-1517

Abstract [English summary modified]: Mortality from traffic accidents in children up to age 14 did not decline since 1949, while mortality due to poisonings and all other accidents declined significantly in all age groups except in girls aged 10 to 14. Older children are more vulnerable to bicycling accidents, younger ones as pedestrians. There has been, however, a large increase in the number of motor vehicles on the road during this period. Educational and other measures to decrease traffic mortality in children are outlined and discussed. Four tables, 4 graphs; 12 references including 9 Czech, 3 Western.

1/1

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(BILIRUBIN blood)
(ERYTHROBLASTOSIS FETAL blood)

POLACEK, Karel; HAJEK, Milos

Hemolytic disease of newborn, control of erythrocyte exchange with
the aid of fetal hemoglobin. Cesk.pediat.16 no.3:201-207 Mr '61.

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(ERYTHROBLASTOSIS FETAL blood)

(HEMOGLOBIN)

(ERYTHROCYTES)

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Prenatal prognosis of hemolytic disease of newborn. II. Prognostic value of maternal antibodies. Cesk. gyn. 26 no.3:212-219 Ap '61.

1. Ustav pro peci o matku a dite v Praze - Podoli, reditel doc. M. Vojta, vedouci pediatickeho vyzkumu primar dr. Karel Polacek.
(ERYTHROBLASTOSIS FETAL diag)

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(ERYTHROBLASTOSIS FETAL diag)